WILDFIRE

Wildfire and Urban Wildfire are an ongoing concern for Placer County. Generally, the fire season extends from early spring to late fall. Fire conditions arise from a combination of hot weather, an accumulation of vegetation, and low moisture content in air and fuel. These conditions, when combined with high winds and years of drought, increase the potential for wildfire to occur. While the wildfire risk is predominantly associated with Wildland-Urban Interface (WUI) areas, significant wildfires can also occur in heavily populated areas, as was demonstrated by the 2002 Sierra Fire in the Loomis area. WUI is a general term that applies to development interspersed or adjacent to landscapes that support wildland fire. WUI areas have been a major focus of California Department of Forestry and Fire Protection's (CDF) fire management strategy since at least 1972. A fire along this wildland/urban interface can result in major losses of property and structures.

Potential losses from wildfire include: human life, structures and other improvements; natural and cultural resources; the quality and quantity of the water supply; other assets such as timber, range and crop land, and recreational opportunities; and economic losses. Smoke and air pollution from wildfires can be a severe health hazard. In addition, catastrophic wildfire can lead to secondary impacts or losses such as future flooding and landslides during the rainy season. Generally, there are three major factors that sustain wildfires and predict a given area's potential to burn. These factors are fuel, topography, and weather.

- **Fuel –** Fuel is the material that feeds a fire and is a key factor in wildfire behavior. Fuel is generally classified by type and by volume. Fuel sources are diverse and include everything from dead tree needles and leaves, twigs, and branches to dead standing trees, live trees, brush, and cured grasses. Also to be considered as a fuel source, are man-made structures, such as homes, and other associated combustibles. The type of prevalent fuel directly influences the behavior of wildfire. Light fuels such as grasses burn quickly and serve as a catalyst for fire spread. In addition, "ladder fuels" can spread a ground fire up through brush and into trees, leading to a devastating crown fire, one that burns in the upper canopy and cannot be controlled. The volume of available fuel is described in terms of Fuel Loading. Certain areas in and surrounding Placer County are extremely vulnerable to fires as a result of dense vegetation combined with a growing number of structures being built near and within rural lands. The presence of fine fuels, 1000 hr fuels and needle cast combined with the cumulative effects of previous drought years, heavy vegetation mortality, tree mortality and blowdown across Placer County has added to the fuel loading in the area. Fuel is the only factor that is under human control.

- **Topography** - An area's terrain and land slopes affect its susceptibility to wildfire spread. Both fire intensity and rate of spread increase as slope increases due to the tendency of heat from a fire to rise via convection. The arrangement of vegetation throughout a hillside can also contribute to increased fire activity on slopes.

Weather - Weather components such as temperature, relative humidity, wind, and lightning also affect the potential for wildfire. High temperatures and low relative humidity dry out the fuels

that feed the wildfire creating a situation where fuel will more readily ignite and burn more intensely. Wind is the most treacherous weather factor. The greater a wind, the faster a fire will spread, and the more intense it will be. Winds can be significant at times in Placer County. North winds in Placer County are especially conducive to hot, dry conditions, which can lead to "red flag" days indicating extreme fire danger. In addition to wind speed, wind shifts can occur suddenly due to temperature changes or the interaction of wind with topographical features such as slopes or steep hillsides. Lightning also ignites wildfires, often in difficult-to reach terrain for firefighters. Related to weather is the issue of recent drought conditions contributing to concerns about wildfire vulnerability. During periods of drought, the threat of wildfire increases.

Factors contributing to the wildfire risk in Placer County include:

- Overstocked forests, severely overgrown vegetation, and lack of defensible space around structures;
- Excessive vegetation along roadsides and hanging over roads, fire engine access, and evacuation routes;
- Conditions such as drought and overstocked forests contribute to increased beetle kill in weakened and stressed trees;
- Narrow and often one lane and/or dead end roads complicating evacuation and emergency response as well as the many subdivisions that have only one means of ingress/egress;
- Inadequate or missing street signs on private roads and house address signs;
- Nature and frequency of lightning ignitions; and
- Increasing population density leading to more ignitions.

All of the above factors indicate a potential for very active to severe fire behavior.

Past Occurrences

Wildfires are of significant concern throughout California. According to the CDF, vegetation fires occur within CDF's jurisdiction on a daily basis; most are controlled and contained early with limited damages. For those ignitions that are not readily contained and become wildfires, damages can be extensive. There are many causes of wildfire from naturally caused lightening fires to human-caused fires linked to activities such as smoking, campfires, equipment use and arson. According to CDF, from 1994 to 1999, over 90 percent of fires in California were attributed to human causes. Further, recent studies conclude that the greater the population density in an area, the greater the chance of an ignition. (http://www.frap.cdf.ca.gov/projects/ignition_regression/_ignit_pop.html.) With population continuing to grow throughout Placer County, the risk from wildfires also continues to grow.

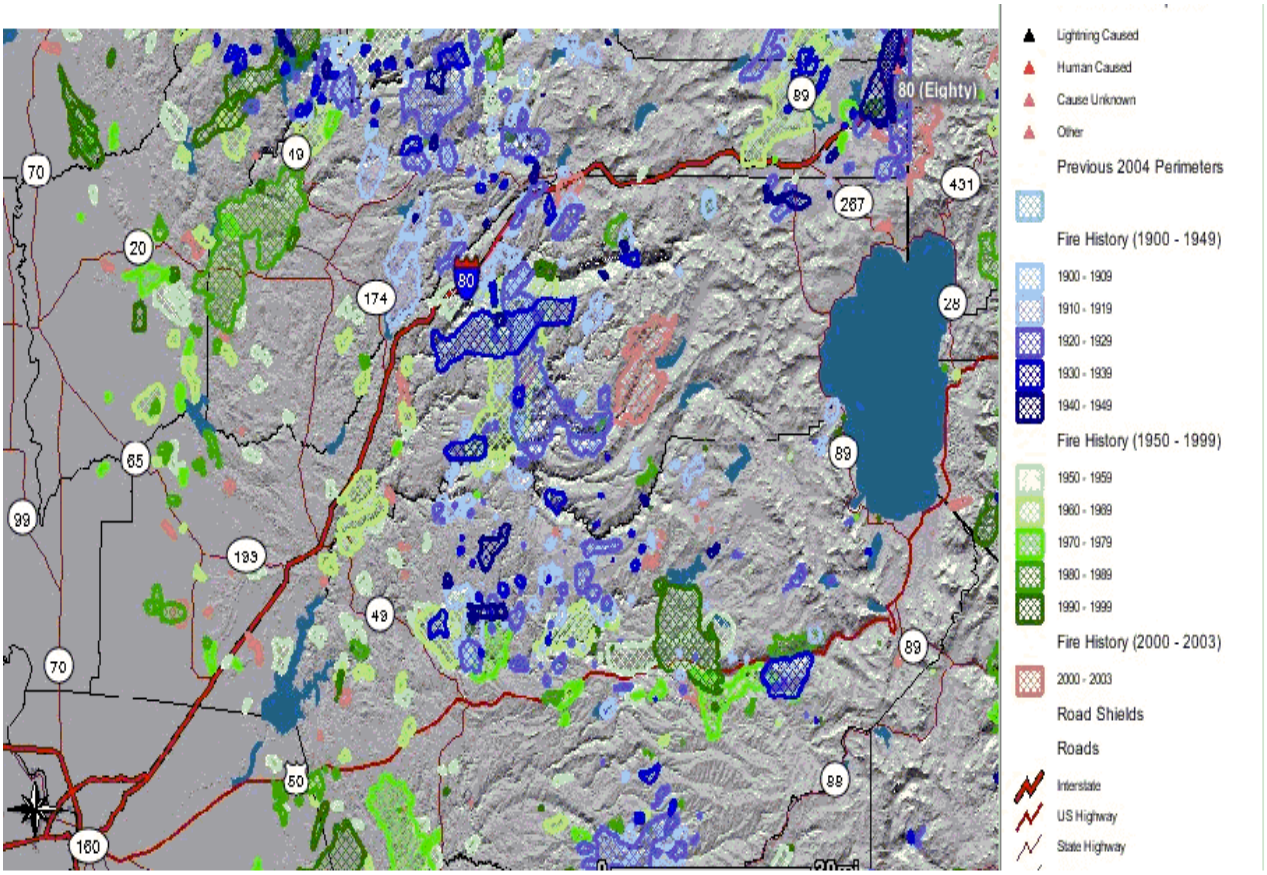
Based on an historical CDF fire database, Placer County has experienced over 149 significant wildfires since 1908. Details are provided in the tables and map provided on the following pages.

Placer County Significant* Fires by Cause and Acres Burned (1908 – 2003)
Summary Table

CAUSE	CAUSE CODE	COUNT	TOTAL ACRES
Lightning	1	9	2,835
Equipment Use	2	4	1,529
Smoking	3	2	534
Campfire	4	2	16,588
Debris	5	2	390
Arson	7	4	645
Miscellaneous*	9	36	75,792
Vehicle	10	3	3,397
Powerline	11	1	284
Unknown/Unidentified	14	86	125,678
Totals		149	227,672

*Definitions of "Significant" and "Miscellaneous" not defined in source document.

Placer County Fire History Map



Source: California Fire Alliance Interactive map website. http://wildfire.cr.usgs.gov/fire_planning/viewer.htm

Placer County Significant Fires by Cause and Acres Burned (1908 – 2003)
Detail Table

FIRES ID	FIRE NAME	ACRES_CALC	AGENCY	CAUSE	YEAR
118		1258	USF	14	1908
119		631	USF	14	1908
120		219	USF	14	1908
143		896	USF	14	1909
172		113	USF	14	1910
174		485	USF	14	1910
175		185	USF	14	1910
176		770	USF	14	1910
177		1533	USF	14	1910
178		260	USF	14	1910
179		2253	USF	14	1910
180		239	USF	14	1910
181		387	USF	14	1910
272		1267	USF	14	1911
453		366	USF	14	1913
454		1272	USF	14	1913
702		1407	USF	9	1916
735		293	USF	14	1916
821	MILLER DIGGINS FIRE	287	USF	14	1917
822	SECTION 28	231	USF	9	1917
831	SECTION 28	1698	USF	9	1917
854		6268	USF	14	1917
855		498	USF	14	1917
856		865	USF	14	1917
1039		1013	USF	14	1918
1048	NORTH WALLACE CANON	9	USF	14	1918
1049	WILD CAT	386	USF	1	1918
1063		178	USF	9	1918
1175		882	USF	14	1919
1176		610	USF	14	1919
1178		1702	USF	14	1919
1179		787	USF	14	1919
1428	PENNSYLVANIA	273	USF	9	1921
1649		189	USF	14	1923
1728		1102	USF	9	1924
1784		1401	USF	14	1924
1785		222	USF	14	1924

FIRES ID	FIRE NAME	ACRES_CALC	AGENCY	CAUSE	YEAR
1786		27876	USF	14	1924
1787		710	USF	14	1924
1788		243	USF	14	1924
1789		105	USF	14	1924
1790		114	USF	14	1924
1792		1769	USF	14	1924
1936	CEMENT HILL	11	USF	9	1925
1939	DEADMAN'S FLAT	2591	USF	9	1925
2031		1671	USF	9	1926
2036		428	USF	9	1926
2037		2640	USF	14	1926
2192		2241	USF	14	1927
2355		259	USF	14	1928
2356		1412	USF	14	1928
2436		107	USF	14	1929
2647	RUBICON	1377	USF	14	1931
2651		52	USF	1	1931
2682		619	USF	14	1931
2683		392	USF	14	1931
2684		3298	USF	14	1931
2906		84	USF	9	1933
2992		678	USF	9	1934
3188		21286	USF	14	1936
3422	RAMSEY CROSSING	25	USF	1	1939
3447		523	USF	14	1939
4224		271	USF	1	1946
4422		129	USF	9	1948
4513		99	USF	9	1949
4514		40	USF	9	1949
4515		125	USF	9	1949
4516		1464	USF	9	1949
4518		342	USF	1	1949
4623	BEACON	407	CDF	14	1950
4778		201	USF	9	1950
4850	EUREKA	221	CDF	14	1951
4855	HALSEY	480	CDF	14	1951
4894	WIZWELL	1049	CDF	14	1951
4962		257	USF	9	1951
5061	DENIZ	297	CDF	14	1952
5156		29	USF	9	1952
5224	MOONEY	257	CDF	14	1953

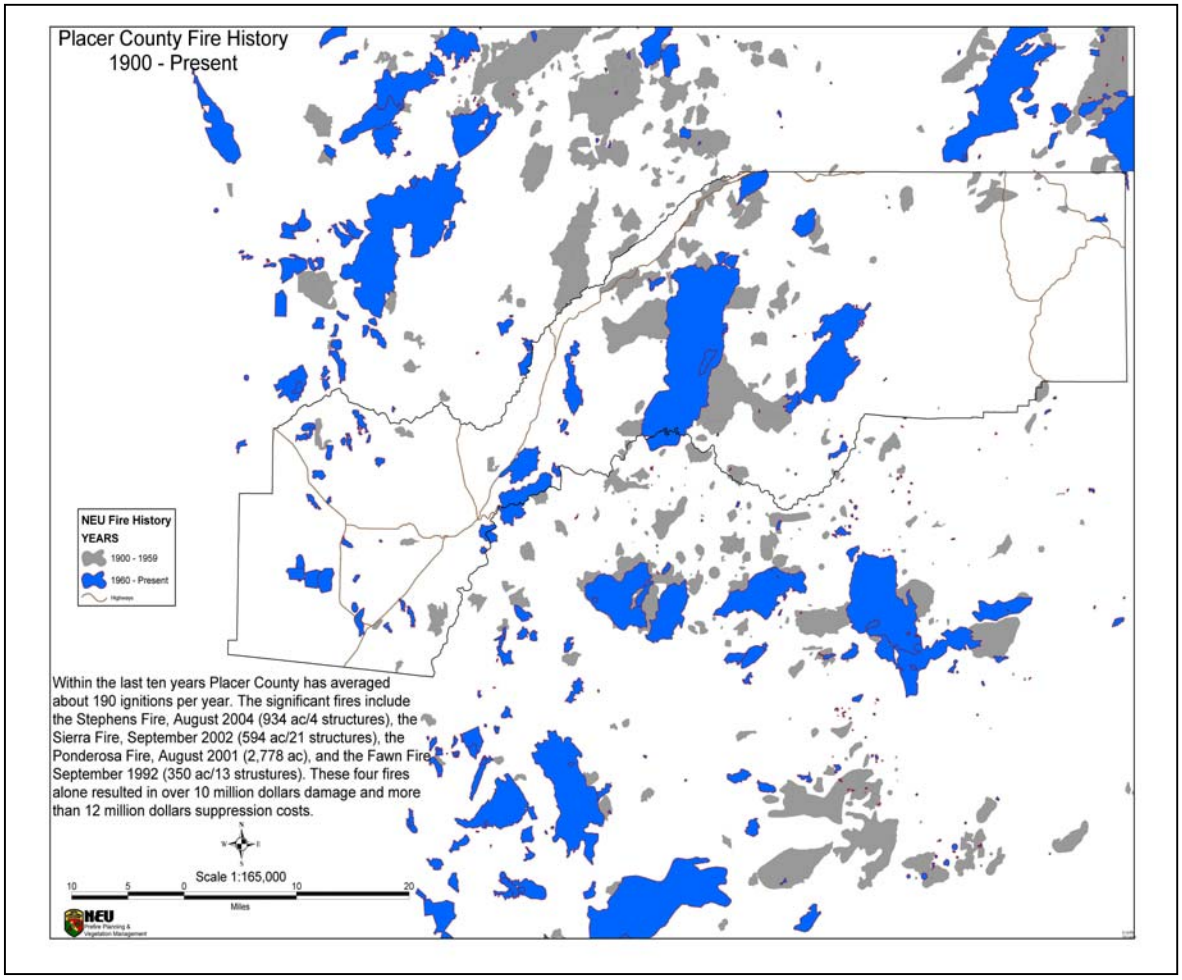
FIRES ID	FIRE NAME	ACRES_CALC	AGENCY	CAUSE	YEAR
5441	OMOHUNDRO	2026	CDF	14	1954
5504		38	USF	9	1954
5562	BROWN BAR CANYON	662	CDF	14	1955
5640		60	USF	9	1955
5731	SAM BABB	316	CDF	14	1956
6037	LIGHTNING #6	551	CDF	14	1958
6192	MADONNA #2	3164	CDF	14	1959
6268		299	USF	9	1959
6404	VOLCANO	2145	CDF	14	1960
6405		19	USF	9	1960
6420		19	USF	9	1960
6465	HOMESTAKE MINE	42598	USF	9	1960
6489	AUBURN	418	CDF	14	1961
6490	AUBURN	672	CDF	14	1961
6494	BILDERBACK	925	CDF	14	1961
6509	GILLIS HILL	953	CDF	14	1961
6510	GREEN VALLEY	526	CDF	14	1961
6674	ROADSIDE #20	102	CDF	14	1962
6846	BREWER	293	CDF	14	1964
6873	PLACER ROADSIDE #51	1730	CDF	14	1964
6877	ROADSIDE #51	3546	CDF	14	1964
6903	HELL HOLE	21	USF	9	1964
6977	APPLEGATE	3529	CDF	14	1965
6986	SPRR #71	268	CDF	14	1965
7475	IOWA HILL	464	CDF	14	1969
7605	JACINTO	385	CDF	14	1970
7610	PONDEROSA	296	CDF	14	1970
7936	SIERRA COLLEGE	188	CDF	14	1972
8779		23	USF	9	1977
9038	ANIMAL	763	CDF	14	1979
9396	DOG BAR	347	CDF	14	1980
9416	ROSEVILLE	236	CDF	14	1980
9699	NADEIC	425	CDF	9	1981
9700	PG&E #5	812	CDF	2	1981
9937	ANDRESSEN	439	CDF	2	1982
10082	NONE	820	CDF	14	1983
10230	CURTIS	876	CDF	14	1984
10417	DOG BAR	186	CDF	3	1985
10431	ROADSIDE 3 4 5 6	1854	CDF	14	1985
10592	ROADSIDE 82	143	CDF	14	1986
10593	ROADSIDE 83	189	CDF	7	1986

FIRES ID	FIRE NAME	ACRES_CALC	AGENCY	CAUSE	YEAR
10594	ROADSIDE 84	65	CDF	14	1986
10636		551	USF	9	1986
10640		2040	USF	14	1986
10738	CONOUCK	183	CDF	2	1987
10833		18	USF	1	1987
10834		891	USF	1	1987
11065		29	USF	9	1988
11237		15	USF	9	1989
11241		9	USF	1	1989
12140		626	USF	9	1995
12188	HELESTER	482	USF	9	1995
13019	DRIVERS	348	CDF	3	2000
13020	AMERICAN	148	CDF	14	2000
13047	DEADWOOD	95	USF	2	2000
13612		243	USF	14	1944
13706	BLUE OAKS	1427	CDF	9	2001
13707	WHITNEY	142	CDF	14	2001
13708	MARTIS	14126	CDF	4	2001
13709	LINCOLN CITY ASST	372	CDF	7	2001
13710	PONDEROSA	2777	CDF	10	2001
13711	GAP-CATNF14107	2462	USF	4	2001
13942	SIERRA	594	CDF	10	2002
13943	PONDEROSA	46	CDF	7	2002
13945	GARDEN	284	CDF	11	2002
14007	STAR	16464	USF	9	2001
14366	SIERRA	26	CDF	10	2003
14367	VALLEY	52	CDF	5	2003
14368	PINES	38	CDF	7	2003
14929	ROYAL	338	USF	5	2003
14935	COD FISH	841	USF	1	2003

Source: California Department of Forestry and Fire Protection 2003 Fire Perimeters GIS coverage.
(The AGENCY attribute in the fires subclass is currently populated with the agency who supplied that particular incident.)

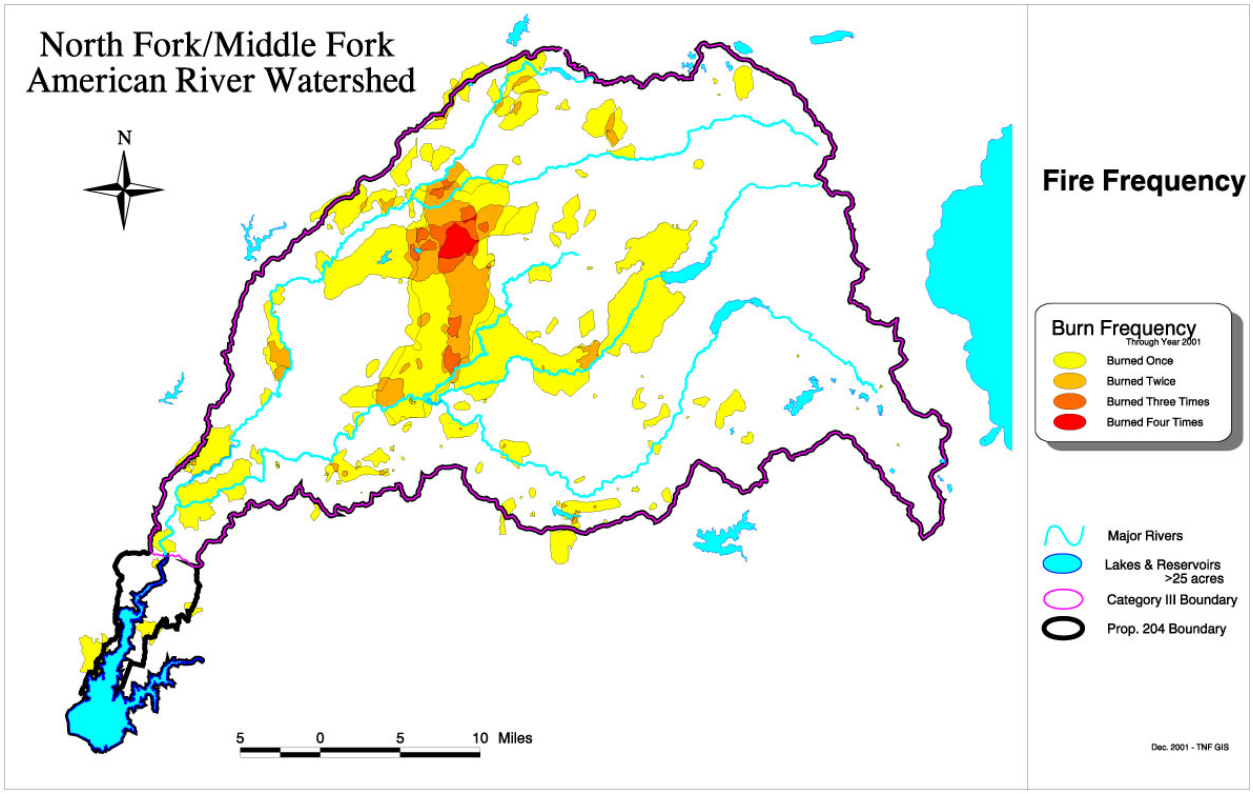
It is important to note, that in addition to the Placer County fire history detailed in the above tables and map, there are numerous smaller fires that occur in the area year after year, many of these a result of "roadside spots" along I-80. These smaller fires also have the ability to quickly get out of hand and become significant fires (e.g., the 2002 Sierra Fire). Also, small fires in acreage can result in large losses. A fire in the Heather Glen area in 2000 was only 10 acres, but resulted in $350,000 in damages because a home was lost.

In addition to the Fire History Map above, CDF has provided a more detailed map below of the history of fires in Placer County and surrounding areas:



(Source: CDF)

Of further interest are areas within the County that have burned multiple times. The following two maps, taken from the American River Watershed Group and the 2000 Lake Tahoe Watershed Assessment document, depict the frequency of burn areas within select areas of the County.



(Source: American River Watershed Group)

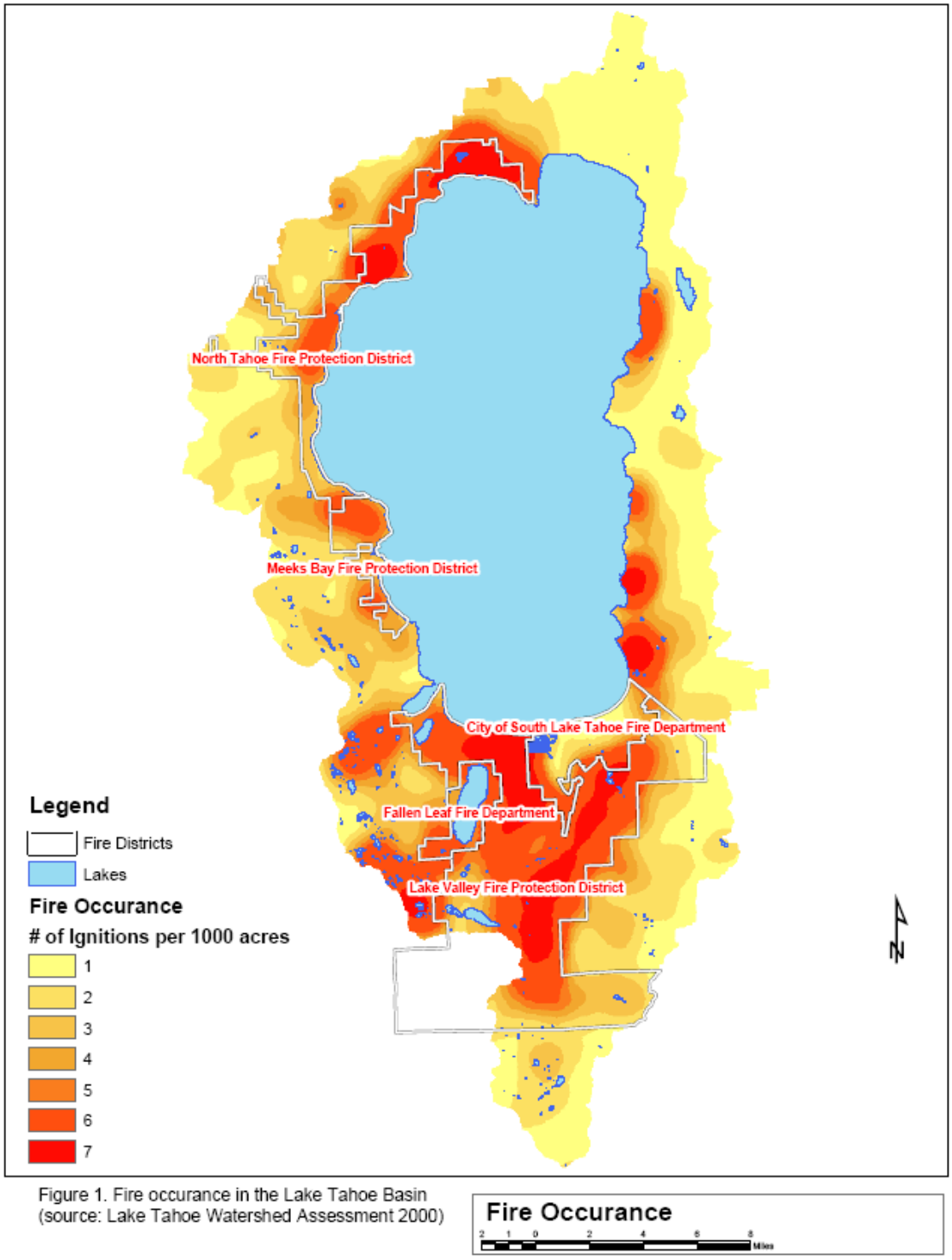


Figure 1. Fire occurance in the Lake Tahoe Basin
(source: Lake Tahoe Watershed Assessment 2000)

The HMPC also provided the following information on historical fires in the County.

1975/1977, Sawmill Fire – The Sawmill Fire and another fire occurred in the area of Cape Horn and Alpine Meadows subdivision, just three miles northeast of Colfax.

1990, Placer County Fire – This fire burned approximately 300 acres of grass, brush, and oaks to burn in the area of Placer Canyon. The fire resulted in evacuations and destroyed several out buildings.

2000, Heather Glen Fire- The Heather Fire caused by sparks from a lost trailer wheel along Interstate 80 destroyed one home and forced a neighborhood evacuation in Applegate. While only ten acres in size, this fire resulted in $350,000 in damage.

August 12-20, 2001, Narrow Gauge Fire – This fire near Colfax burned 30 acres and forced closure of I-80 for about an hour due to dense smoke. This fire, blamed on a catalytic converter, was quickly contained as California Department of Forestry air tankers were already in the area and able to quickly respond.

August 2001, Gap Fire- The Gap Fire near Blue Canyon burned 2,462 acres of forestland and caused the closure of Interstate 80.

August 17-23, 2001, Ponderosa Fire- This fire burned 2,780 acres.

August 25 – September 13, 2001, Star Fire- The Star Fire started in Eldorado National Forest and spread to Tahoe National Forest and burned approximately 16,761 acres.

Star Fire, August 26, 2001. Eldorado National Forest.
Photo Courtesy of USFS.

2001, Martis Fire- This fire east of Truckee burned 20,000 acres; threatened homes; shut down Interstate 80; and damaged railway trestles affecting Amtrak passenger train service. The heavy smoke caused poor air quality and raised health issues for individuals with respiratory problems.

While the Martis Fire itself was not in Placer County, there were significant impacts to the County as a result of this fire. The County also contributed major firefighting assistance.

2002, Sierra Fire- Within the communities of Loomis and Granite Bay approximately 900 acres of grass, brush and oaks burned in the area of Interstate 80, Barton Road, Wells Avenue, Morgan Place, Indian Springs, and Cavitt-Stallman Road. The fire destroyed six structures and threatened two schools. One hundred homes were evacuated, and more than 1,000 homes in both communities were threatened. FEMA provided federal funds to assist in fighting this wildfire.

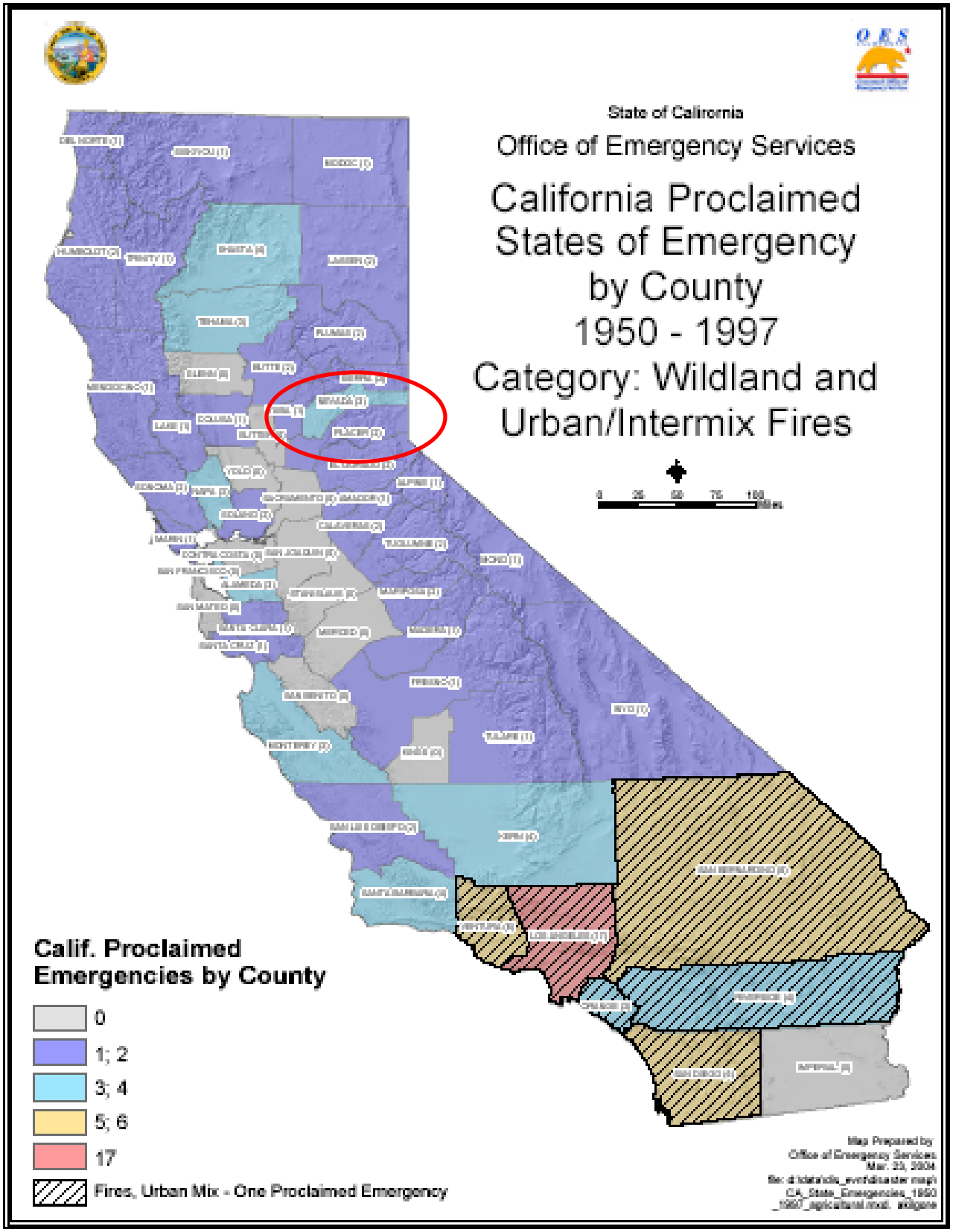
2004, Stevens Fire- The Stevens Fire located at Cape Horn/Iowa Hill near Colfax, was 100 percent contained at 934 acres.

2004, Numerous fires- Numerous fires of varying sizes occurred in Placer County during the 2004 fire season. These include fires caused by equipment sparks, abandoned campfires, arson and undetermined causes.

Stevens Trail Fire. Photos from website: http://yubanet.com/stevenstrail.html; courtesy of Roger Burdick.

Stevens Trail Fire. Photos from website: http://yubanet.com/stevenstrail.shtml; courtesy of Robin Yonash.

Although historically there have been numerous wildfires in Placer County, there have only been two proclaimed states of emergencies for wildfires between 1950 and 1997. This is illustrated in the following map from the Draft California Multi-Hazard Mitigation Plan.


State of California
Office of Emergency Services
California Proclaimed States of Emergency by County 1950 - 1997
Category: Wildland and Urban/Intermix Fires
Calif. Proclaimed Emergencies by County
0
1; 2
3; 4
5; 6
17
Fires, Urban Mix - One Proclaimed Emergency
Map Prepared by
Office of Emergency Services
Mar. 23, 2004